

Work Order ID 97890

March-01-13 10:40:45 AM

97890

Page 1

Item ID: D5955

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Saddle. 205

Start Date: 3/01/13 Start Qty: 4.00

4

Cust Item ID:

Required Date: 3/15/13 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: *MLJ*

Date: *13-03-01*

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D5955

Rev B

100

0.00

100

HAAS CNC VERTICAL MACHINING #1

HAAS I

Memo

0.00

HAAS CNC vertical machine #1

1-Machine as per folio D5955.Ensure Batch Number is entered2-Machine
Keyway3-Deburr & Tumble

QC/BA 2013-03-19

4

φ

110

QC1- Inspect dimensions to dimension sheet

0.00

110

QC

Memo

0.00

Quality Control

QC/BA 2013-03-20

4

φ

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

4

φ

33

13-03-20

Work Order ID 97890

March-01-13 10:40:45 AM

97890

Page 2

Item ID: D5955

Revision ID:

Item Name: Saddle, 205

Start Date: 3/01/13 Start Qty: 4.00

Required Date: 3/15/13 Req'd Qty: 4.00

Reference:

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

130

Chemical Conversion Coat per QSI005 4.1

0.00

130

HandFinish

Memo

0.00

Hand Finishing

4 2613 #1

140

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

140

Powdercoat

Memo

0.00

Powder Coating

START TIME:

FINISH TIME:

OVEN TEMPERATURE:

m121245

3200 F

3250

150

QC3- Inspect Part Finish

0.00

150

QC

Memo

0.00

Quality Control

4XJ m/ 13/04/01

de d 3/13/2010

Work Order ID 97890

March-01-13 10:40:45 AM

97890

Page 3

Item ID: D5955

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Saddle. 205

Start Date: 3/01/13 Start Qty: 4.00 *4*

Cust Item ID:

Required Date: 3/15/13 Req'd Qty: 4.00 *4*

Customer:

Reference:

Approvals: Process Plan: Date:

Tooling: Date:

Run Start *NR1*

QC: Date:

SPC.(Y/N): Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

160

Identify as per dwg & Stock Location: _____

0.00

160

Packaging

Memo

57430

0.00

Packaging

43/02 (4)

170

QC21- Final Inspection - Work Order Release

0.00

170

QC

Memo

0.00

Quality Control

13/4/3

1304-3

Picklist Print

March-01-13 10:40:50 AM

Page 1

Work Order ID: 97890

Parent Item: D5955

Parent Item Name: Saddle, 205

97890

D5955

Start Date: 3/01/13

Required Date: 3/15/13

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:E Re-Format 05-11-29 JLM
IPP Rev:F ecn826 06.12.06 ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-013		Manufactured	No			100	Each	11.0000	1	4			
**													

D6101-013

Saddle Billet

Location

MAT047

46413

81925

Loc Qty

11

7

4

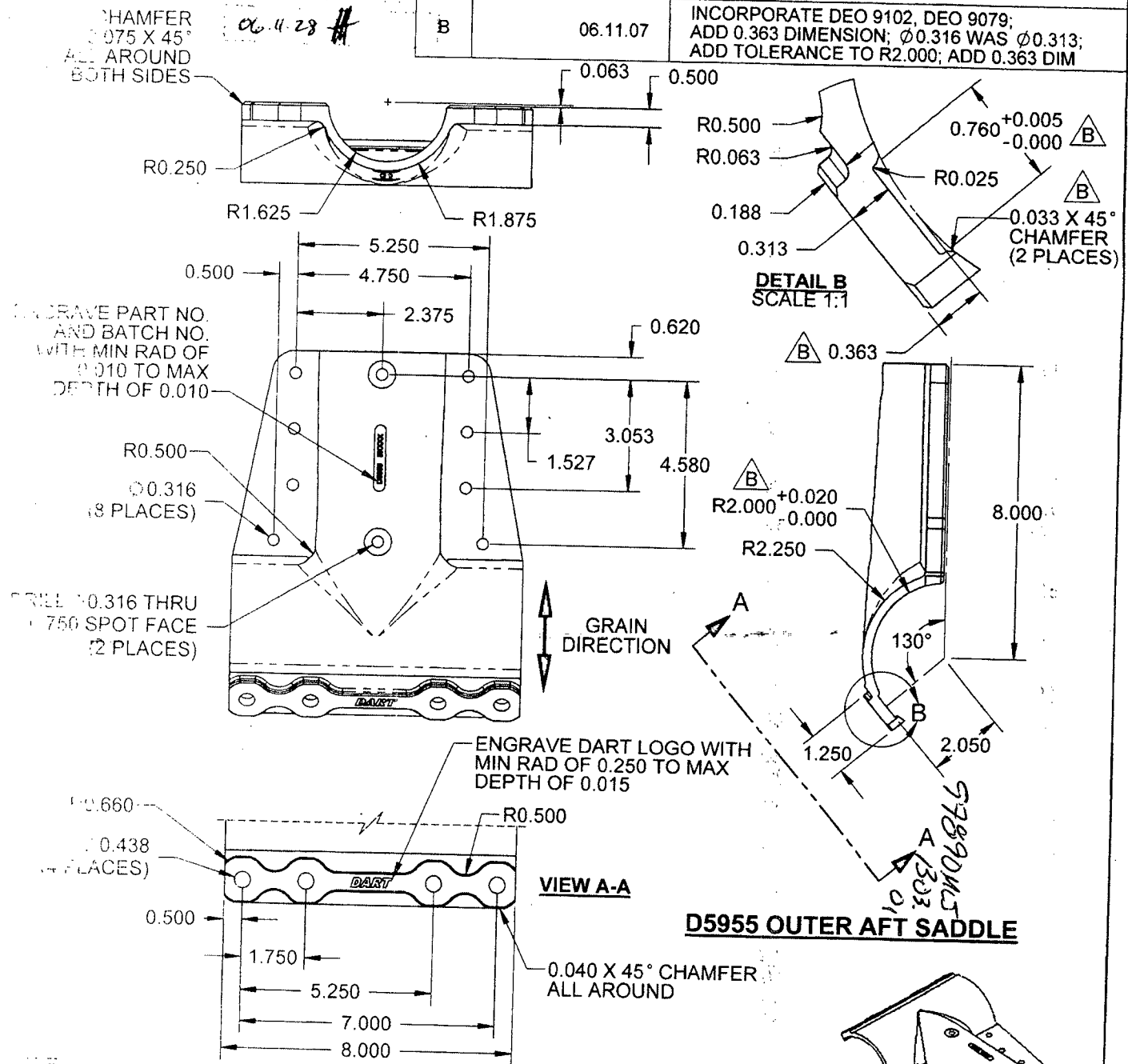
Loc Code

3
1

Fk 13/03/13



DESIGN BW	DRAWN BY CB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED LE	APPROVED H	DRAWING NO. D5955	REV. B SHEET 1 OF 1
DATE 06.11.07	TITLE OUTER AFT SADDLE		SCALE 1:4
REV A	DATE 97.05.06	DESCRIPTION NEW ISSUE	
B	06.11.07	INCORPORATE DEO 9102, DEO 9079; ADD 0.363 DIMENSION; $\phi 0.316$ WAS $\phi 0.313$; ADD TOLERANCE TO R2.000; ADD 0.363 DIM	



- MATERIAL: ALUMINUM 7075-T7351 PER QQ-A-250/12
(MAKE FROM D6101-013 SADDLE BILLET, 7075)
FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
BREAK ALL SHARP EDGES 0.010 TO 0.020

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Direct dimensions highlighted on inspection sheet drawing and record below:

Audited by	
Date:	

7: dimension sheets\approved DS\Blank-DimSheet rev A.doc

Date: Wednesday, 11/03/2009 9:53:21 AM
User: Chantal Lavoie

Process Sheet

SPUR

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	SADDLE BILLET
Job Number :	46413 - 1		
Estimate Number :	10036		
P.O. Number :		Part Number :	D6101013
This Issue :	11/03/2009 S.O. No. :	Drawing Number :	D6101 REV A
Prsht Rev. :	NC	Project Number :	N/A
First Issue :	11 Type : PURCHASED PARTS	Drawing Revision :	A
Previous Run :	41963	Material :	
Written By :		Due Date :	18/09/2009 Qty: 50 Um: Each
Checked & Approved By :	<u>C209/03/11</u>		
Comment :	Est. A: 01.05.04 New Issue EC		

Additional Product

Job Number:

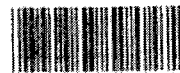


Seq. #: Machine Or Operation: Description :

1.0

PG

PURCHASING



Comment: PURCHASING

Issue P/O: 8393

a) Description: Alluminum billet

b) 10.100" x 8.250" x 2.50" thick (+0.030 / -0.000)

c) Tolerance on all dimensions are +0.030/-0.000"

d) Grain direction along 10.100" length

e) Material: 7075-T7351 (QQ-A-250/12)

f) Material certification required

C209/03/13

(50)

2.0

D6101013P

Saddle billet



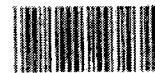
Comment: Qty.: 1.0000 Each(s)/Unit Total: 50.0000 Each(s)

Saddle billet

3.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

10/29/06/08 09/06/08

4.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6101

S09/06/10 (X10)

Date: Wednesday, 11/03/2009 9:53:22 AM

User: Chantal Lavie

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE BILLET

Job Number: 46413

Part Number: D6101013

Job Number:



Seq. #:

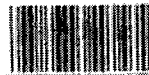
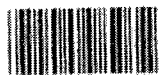
Machine Or Operation:

Description :

5.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

mf 09/09/04

(10)

6.0

QC21

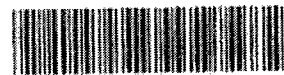
FINAL INSPECTION/W/O RELEASE



09/10/05

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



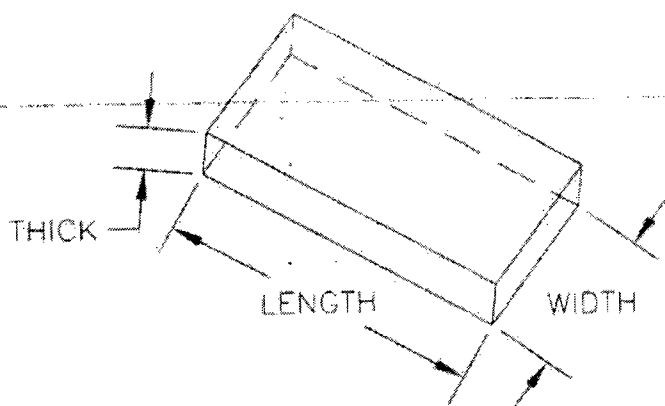
09/10/02



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>JS</i>	DRAWING NO. D6101	Rev. A SHEET 1 OF 1
DATE 01.03.30		TITLE SADDLE BILLET, 7075	SCALE NFS
A	01.03.30	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
(01.04.33) *#*



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 46413

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length

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**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 1

No de Formulaire d'Emballage / Pack Slip No: 2822042

Expédié de / Ship From:		Vendu à / Sold To:		Expédié à / Ship To:		Livré à / Deliver To:	
Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms		Transporteur / Carrier	N° du Bon de connaissance / BOL No	N° de livraison / Delivery No	
08-JUN-09	ORIGIN	Prepaid		LOCAL_FLEET	11845-10	2822042	

Détails d'expédition / Shipment Details

Destination finale / Final Destination Branch - MON

N° de commande / Order No	N° de ligne Line No	N° d'article / Item No	Description			
197018	3	6879.MO	2.5000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 8.25 IN () X 10.1 IN ()			
N° de bon de commande / Purchase Order No	Nbre de pièces / Part Number		Qté commandée / Ordered Qty	Qté Facturée / Invoice Qty	Solde à livrer / Backorder Qty	
8393			10 PCS	10 PCS		
Détails / Details						
Usine / Mill	No de coulée / Heat Number	Code mec / Mech Id	Pièces / PCS	Largeur (Pouce)/ Width (IN)	Longueur (Pouce)/ Length (IN)	Qté expédiée/ Shipped Qty (LBS)
	407251		10			210.43

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, warefare exported thereunder. Diversion contrary to US Law is Prohibited.

Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé ou mesuré ou coupé par le client ne peut être retourné pour crédit.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A. M. Castle & Co. within 60 days of the shipment. Material cut to the correct size or material cut by the customer cannot be returned for credit.

Ce matériel a été reçu et inspecté par
This material has been received and inspected by:

Date:

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material meet the composition limits and had the mechanical properties shown on the face of this sheet.

Walden Murphy
Director of Manufacturing Davenport Works

Victor P. Young
Quality Assurance Manager

291937
Ship Date 01-10-2009 B.L. No. 3286081 Invoice No. 00000 Alcoa No. Item 1000062104-1 Page 1
P.O. No./Govt Contract No. 01-16542 Customer Alcoa Item Mfg Order CASTLE A M 0041005634R08 DS-62304-1

Ship To: A M CASTLE & COMPANY
3400 NORTH WOLF ROAD
BAY #6
FRANKLIN PARK 60131 IL

Item Description
2.5 IN TK (+.0750 - .0750) X 48.5 IN W (+.3125 - 0.000) X 144.5 IN LN (+.5 - 0.0) CAT D 154168 (N) A/T 7075- T7351 RECTANGLE MILL FINISH, US1 3MM DEAD ZONE REQ'D BOTH SIDES, SAWED IAC 6879. EXC MRK A97075-60 REV 22 AMS-QQ-A-250/12 IS 2007 AMS- STD-2154 EXC MRK AMS4078 REV 0 EXC MRK ASTM8209 REV 07 ASTM8594 REV 06 B687055 REV A EXC MRK MMS159 REV N PS21217 REV K ((MARKED)) KRAFT PAPER INTERLEAVED MAX GROSS SKID WGT: 4500 LB QUAN TOL +/- 25 % US1 CL A 3 MM CQR 0137890 REV 17 CUST REQ 08-11-04 *** W/E 09-01-17 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Serl
1	709656	407251	3545	2	PC	

Notes for CQR: 0137890.17

PRODUCT PRODUCED TO THE REQUIREMENTS OF ASTM2375 ALSO MEET THE REQUIREMENTS OF AMS-STD-2154. PRODUCT PRODUCED TO THE REQUIREMENTS OF AMS-STD-2154 ALSO MEET THE REQUIREMENTS OF ASTM2375. THIS MATERIAL HAS BEEN ULTRASONICALLY INSPECTED FULLY IMMERSION - TYPE I. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/12 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/12P. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/12 P ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/12. Exception to Spec A97075-60 ; Reven: 22 Issue: Letter dated 2007-05-14 from AHERN, DENNIS T to FLATTER, BARR.

CQR: 0137890.17 -Specification Limits

Temp	Dir	UTS	TYS	ELAD
		KSI	KSI	PCT
T7351	Long Transv.	Max	63.9	
		Min	56.0	52.0
T7351	Elec. Cond. (EC)	MIN 38.0 PCT		

Chemical Composition	SI	FE	CU	MN	MG	CR	ER	TI	Other	Other	Each	Total	Aluminum
Alloy 7075	Max	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15		
	Min			1.2		2.1	0.18	5.1					REMAIN

JAN-14-2009 10:56

AM CASTLE METALS

B474568927

P.017

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

For:

[Signature]
Elwood Murphy
Director of Manufacturing Development Works

[Signature]
Kenton P. Young
Quality Assurance Manager

991917	0	Invoice No.	Alcoa No.	Item	Page 2
Ship Date	B.L. No.				
2009-01-10	3286081	00000	1000062304-1		
P.O. No./Govt Contract No.	Customer	Alcoa Item	Mfg Order		
01-16542	CASTLE A M	0041005634R08	DS-62304-1		

COR: 0127890.17 - Specification Limits (cont.)
Lot: 407251 - Mechanical, Physical, Metallurgy, Quantometer Results

Temp	Dir	Test	UTS	TYS	ELAD
			KSI	KSI	PCT
T7351	Long Transv.	1	69.8	58.3	10.3
			69.8	58.2	10.4
			69.8	57.8	10.2

T7351 Elect Cond %IACS 40.4 40.7 40.5 PCT

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9127044	Actuals	0.06	0.29	1.6	0.02	2.5	0.19	5.7	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

CASTLE METALS CORP
DATE RCVD 11/14/09
IAC 6879
APPROVED BY *[Signature]*

JAN-14-2009 10:56

AM CASTLE-METALS

B474558927

P.018

WIP Receipt Listing

Page 1 of 1

October 1, 2009 7:21:46 AM

Criteria: Work Order ID: 46413 All Items All Product Families All References All Employees All Receipt Dates
Grouped by Work Order ID Sorted by WO ID

Work Order ID	Reference	Item ID	Item Name	Recv. Emp.	Employee Last Name	Required Date	Required Qty	Status Code	Receiver Date	Recv. Qty	Receipt Amount	Balance Due
46413		D6101-013RevA	Saddle Billet	LACE01	Lacelle	8/03/09	50.0000	Released	8/06/09	20.0000	\$2,500.00	30.0000
						Totals:	50.0000			20.0000	\$2,500.00	30.0000

Dart Aerospace Ltd

Dart Aerospace Ltd
1270 Aberdeen St
Hawksbury, Ontario K6A 1K7
Phone: (613) 632-3336
Fax: (613) 632-4443

Receiving Slip

Date Jun 10, 2009	Page 2
Receipt Number RCP00011216	

Purchase From:

Metaux Castle
A.M. Castle & Co. (Canada) Inc. - Box B9204
P.O. Box 9100
Toronto, ON M4Y 3A5

Ship To:

Main Finished Goods Location
Dart Aerospace Ltd
1270 Aberdeen St
Hawksbury, Ontario K6A 1K7

Reference	Description	Contact	Vendor Number	PO Number
BLANKET P.O.			VC-MET001	PO00008393

Vendor Item Number	Item Number	Description	Qty. Received	UOM	Unit Cost	Extended Cost	Arrival Date
	D6101013P	B46412 GRAIN DIRECTION ALONG 7.750" LENGTH TOLERANCE ON ALL DIMENSION ARE +0.030" / -0.000" SIZE: 7.750" X 8.250" X 2.50" THICK ALLUMINUM BILLET MATERIAL: AS ABOVE Saddle billet	10.0000	Each	125.000000	1,250.00	Jun 10, 2009
		B46413 GRAIN DIRECTION ALONG 10.100" LENGTH TOLERANCE ON ALL DIMENSION ARE +0.030" / -0.000" SIZE: 10.100" X 8.250" X 2.50" THICK ALLUMINUM BILLET MATERIAL: AS ABOVE					

Comments:
RELEASE DATES TBA

Work Order ID 46413

2 SPLIT



Page 1

June 29, 2009 10:26:13 AM

Item ID: D6101-013

Accept



Setup Start



Revision ID: A

Stop



Item Name: Saddle Billet

Start Date: 17/07/2009 Start Qty: ~~50.00~~ *30*



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 50.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D6101

Rev A

100

0.00



Purchasing

PURCHASING

Memo

0.00

Purchasing

Issue P/O: *83523* : (a) Description: Aluminum billet : (b) 10.100" x 8.250" x 2.50" thick (+0.030 / -0.000) : (c) Tolerance on all dimensions are +0.030" / -0.000" : (d) Grain direction along 10.100" length : (e) Material: 7075-T7351 (QQ-A-250/12) : (f) Material

09/10/23

110

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure material certification is attached

09/4/06 (10)

120

QC6- Inspect dimensions to drawing

0.00



QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6101

08/04/09

Work Order ID 46413

June 29, 2009 10:26:13 AM



Page 2

Item ID: D6101-013

Accept



Setup Start



Revision ID: A

Stop



Item Name: Saddle Billet

Start Date: 17/07/2009 Start Qty: 50.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 50.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130



Packaging

Identify as per dvg & Stock Location: MAT

0.00

mf 09/11/09

10

Memo

0.00

140



QC

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

Quality Control

09/11/10 mf
09-11-10

Picklist Print

June 29, 2009 10:26:12 AM

Page 1

Work Order ID: 46413

Parent Item: D6101-013RevA

Parent Item Name: Saddle Billet



Start Date: 17/07/2009

Required Date: 03/08/2009

Start Qty: 50.00

Required Qty: 50.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6101-013PRevA		Purchased	No			110	Each	10.0000	50.0000			
												
												
Saddle billet												

10/14/09 (10)

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Pack Slip No:6220298

Ship From: Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 05-NOV-09	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN	BOL No 114842-2	Delivery No 6220298	

Shipment Details	Final Destination Branch - MON
-------------------------	---------------------------------------

Order No 369846	Line No 3	Item No 6879.MO	Description 2.5000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 8.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 10.1")) X 10.1 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 10.1")) - ALUMINUM PLATE SAW			
Purchase Order No 8393		Part Number		Ordered Qty 10 PCS	Invoice Qty 10 PCS	Backorder Qty
Details						
Mill	Heat Number 422799A7	Mech Id	PCS 10	Width (IN)	Length (IN)	Shipped Qty (LBS) 210.43

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

This material has been received and inspected by:	Date:
---	-------

Signature
09/11/09

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4128061

* Lot: 422799A7 Cast 161 Drop 29 Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.2 : 72.5 (484 : 500)	58.1 : 61.4 (401 : 423)	9.8 : 10.0

(ASTM E1004)

Conductivity %IACS :	40.5 Min	40.9 Max
(MS/M) :	23.5 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.20	1.5	0.02	2.7	0.19	5.7	0.02	0.01	0.01	TOT 0.03

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

Conf
04/10/09

CASTLE METALS - KENT	
DATE REC'D <u>5-2-09</u>	CUST. _____
REC'D FROM <u>Kaiser</u>	CUST. P.O. _____
APPROVED BY <u>AM</u>	AMC S/O _____
TR # <u>422799A1/422799A7</u>	
WE HEREBY CERTIFY THAT THESE ARE CORRECT COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO.	
BY: _____	<u>Dec: 6879</u>

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

Bill Poy

SHIP TO:

CASTLE METALS
C/O CUTTER PRECISION METALS
1208 NO. 4TH AVE
KENT, WA 98032

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4128061

SOLD TO:

AM CASTLE & CO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-24870		WORK PACKAGE:	CUSTOMER PART NUMBER: 8879 A97075-80		SHIP RUN/LOAD ID: 101272/3	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1066098	LINE ITEM: 1	SHIP DATE: 28-APR-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE	
WEIGHT SHIPPED: 7214 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2017533		GAUGE: 2.5000 IN	WIDTH: 48.500 IN	LENGTH: 144.500 IN	

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG

AMS-QQ-A-250/12
ASTM B 594/Rev08
CMMP 025/RevR
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 422797A1 Cast 161

Drop 21

Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.8 : 71.0 (488 : 490)	60.2 : 60.6 (415 : 418)	9.7 : 10.4

(ASTM E1004)

Conductivity %IACS :	41.4 Min	41.6 Max
(MS/M) :	24.0 Min	24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.22	1.6	0.02	2.4	0.18	5.6	0.02	0.01	0.01	TOT 0.03

Work Order ID 81925

81925

Page 1

March 21, 2012 8:10:06 AM

Item ID: D6101-013

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Saddle Billet

Start Date: 3/21/12 Start Qty: 20.00

20

Cust Item ID:

Required Date: 4/05/12 Req'd Qty: 20.00

20

Customer:

Reference:

Run Start

NR1

Approvals: Process Plan: CL

Date: 12/03/21

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D6101

Rev B

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 16517

a) Description: Aluminum billet

b) 10.100" x 8.250" x 2.50" thick (+0.030 / -0.000)

c) Tolerance on all dimensions are +0.030/-0.000"

d) Grain direction along 10.100" length

e) Material: 7075-T7351 (QQ-A-250/12)

f) Material certification required

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

CL 12/03/21 (20)

Pg 4/5 (20)

Work Order ID 81925

81925

Page 2

March 21, 2012 8:10:06 AM

Item ID: D6101-013

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Saddle Billet

Start Date: 3/21/12 Start Qty: 20.00

20

Cust Item ID:

Required Date: 4/05/12 Req'd Qty: 20.00

20

Customer:

Reference:

Run Start

NR1

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6101

CL 12/04/06

20

0

130

Identify as per dwg & Stock Location: MAT47

0.00

130

Packaging

Memo

0.00

Packaging

CL 12/04/06

20

0

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

12/4/10

CL 12/04/10

Picklist Print

Page 1

March 21, 2012 8:10:06 AM

Work Order ID: 81925
Parent Item: D6101-013
Parent Item Name: Saddle Billet

Start Date: 3/21/12

Required Date: 4/05/12

Start Qty: 20.00

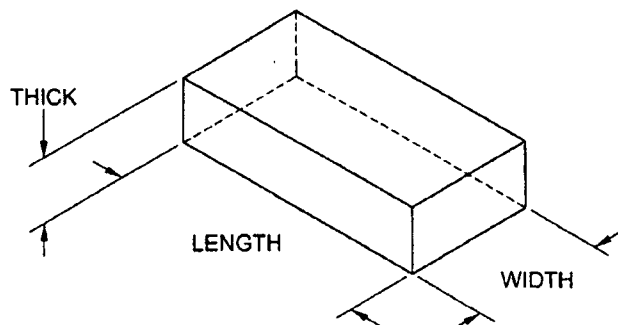
Required Qty: 20.00

Comments: IPP A: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-013P Saddle billet		Purchased	No			110	Each	0.0000	1	20			

Pc 1/24/10 (20)

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

B

RELEASED
09/07/15/WP

CL12/03/21
W10: 81925

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No: 1258678

Expédié de / Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2	Vendu à / Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	Expédié à / Ship To: WILL CALL-MONTREAL 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	Livré à / Deliver To: WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA
Date d'expédition / Date Shipped 04-APR-2012	F.O.B. ORIGIN	Modalités de transport / Freight Terms Prepaid	Transporteur / Carrier MANITOULIN
			No du Bon de connaissance / BOL No 1258678-2

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch - MON
--	--

N° de commande / Order No	N° de ligne / Line No	N° d'article / Item No	Description
2088264	1	752241.MO	2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 8.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 10.1")) X 10.1 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 10.1")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12
N° de bon de commande / Purchase Order No 16517	Nbre de pièces / Part Number YOUR ITEM NUMBER: D6101-013	Qté commandée / Ordered Qty 20.00 PCS	Qté Facturée / Invoice Qty 20.0000 PCS

Détails / Details		No de coulée / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty(LBS)
N° de livraison / Delivery No :	Usine / Mill						
117493207		572947A0		8			172.36
117493207		572947A0		10			215.45
117493207		569096A1		2			43.09

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SHIP TO: A M CASTLE & CO 3050 SOUTH HYDRAULIC WICHITA, KS 67216
SOLD TO: AM CASTLE & CO- SOLD TO 1420 KENSINGTON RD SUITE 220 OAK BROOK, IL 60523

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4250487

CUSTOMER PO NUMBER: 134472	WORK PACKAGE:	CUSTOMER PART NUMBER: 752241 AMC CA-15413B R 3	SHIP RUN/LOAD: 102217/10	GOV'T CONTRACT NUMBER:		
KAISER ORDER NO: 1124704	LINE ITEM: 1	SHIP DATE: 10-JAN-2012	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate
WEIGHT SHIPPED: 7164 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2035227	GAUGE: 2.5000 IN	DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN	

MHU 1556670: LOT 572947A0: 2 pieces;
MHU 1556676: LOT 569096A1: 2 pieces;

Certified Specifications

AMS 4078/RevJ
ASTM B 209/Rev10
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG/Amd1

AMS-QQ-A-250/12
ASTM B 594/Rev09
CMMP 025/RevT
EAC MS1011/RevE
MMS 159/RevR

AMS-STD-2154/Rev98
BAC 5439/RevH
CSTI 006/RevD
GAMPS 9101/RevB
PS 21211/RevL

Test Results

Test Code: 4297

Lot: 569096A1 Cast 445 Drop 16 Ingot 3 Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.5 : 70.6 (486 : 487)	59.3 : 59.8 (409 : 412)	11.2 : 11.8

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	40.9 Min	41.7 Max
(MS/M) :	23.7 Min	24.2 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.19	1.4	0.04	2.4	0.20	5.6	0.03	0.01	0.01	TOT 0.05





Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4250487

Lot: 572947A0 Cast 445

Drop 37

Ingot 2

Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.4 : 70.5 (485 : 486)	59.1 : 59.3 (407 : 409)	11.7 : 11.8

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	41.1 Min	41.4 Max
(MS/M) :	23.8 Min	24.0 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.07	0.17	1.4	0.06	2.5	0.20	5.8	0.03	0.01	0.01	TOT 0.05

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

MIKE KLOCKE, LABORATORIES SUPERVISOR

